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VENTURE CAPITAL TWENTY YEARS ON: REFLECTIONS ON THE EVOLUTION OF A FIELD

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ABSTRACT

This paper reviews the circumstances surrounding the launch of *Venture Capital: An International Journal of Entrepreneurial Finance* in 1999. It highlights a number of significant changes in the structure of the entrepreneurial finance market over the past 20 years, notably the decline of 'classic' venture capital, the effective closure of the small-cap IPO market, the scale-up problem and the emergence of a second equity gap, and the institutionalisation of the business angel market. A number of new players in the market – coinvestment schemes, equity crowdfunding platforms and blockchain technology-based Initial Coin Offerings – are discussed and the challenges and opportunities they pose for investors, entrepreneurs, policy makers, regulators and academic researchers are assessed. Against this background, a number of key features of the evolution of the content and focus of the Journal are discussed. The paper finishes with a summary of the papers included in this Special Issue.

Key words: Entrepreneurial finance; Angel groups and syndicates; Coinvestment schemes; Equity crowdfunding; Initial Coin Offerings

INTRODUCTION

When *Venture Capital* was originally conceived, prompted by a conversation with Graham Bannock[1] on a bus to Saarbrucken airport following an EU meeting on SME finance in Luxemburg in 1997, venture capital fund raising and investment was riding high on a cyclic upswing, business angel finance was becoming the focus of more sustained attention, government interest and policy involvement in the entrepreneurial finance market was expanding and the IPO market was booming. The rationale for establishing the Journal rested on four developments (Mason and Harrison 1999). First was the growing economic role and significance of entrepreneurial finance (then almost exclusively thought of in terms of institutional venture capital) in the emergence of new technologies, industries and markets through its support of new and rapidly growing firms, and through that its contribution to economic development regionally and nationally. Second was the growth in the scale of venture capital industry, in terms of funds raised and invested in the US and Europe (in which regard it was noted, presciently as it turned out, that 'we would appear to be close to the peak of the cycle at the present time' (Mason and Harrison 1999, 4)), and the emerging global expansion of the industry. Third was the pattern of evolution of the industry, reflected in the growing importance of private equity, business angel investing (where the emergence of business

[1] Graham Bannock played a key role in the UK government's renewed support for small firms from the 1970s onwards through his role as director research with the Committee of Inquiry on Small Firms, 1970-1971 (the Bolton Committee) and subsequently as managing director of the Economists Advisory Group Ltd and The Economist Intelligence Unit and then as chairman, Graham Bannock & Partners Ltd.

angel groups and syndicates, an important theme in contemporary research (Mason and Harrison 2015; Mason et al 2016) was already being flagged up), corporate venturing and public sector venture capital. Fourth was the growing evidence of the transfer of experience and knowledge from countries with a long tradition of VC activity (notably the US) to other countries seeking to develop their own VC industries in which bodies such as OECD and the World Bank played a prominent role.

Based on this rationale the original aims of the Journal were five-fold: first, to raise the profile of and stimulate academic research into the entrepreneurial risk capital market; second, to consolidate and provide a focus for entrepreneurial finance research from a diverse range of perspectives; third, to overcome the discipline- and topic-based fragmentation of published entrepreneurial finance research (a fragmentation that continues to the present – Cumming and Johan 2017; Cumming and Vismara 2017); fourth, to facilitate a dialogue between academic researchers and industry practitioners and policy makers by becoming a 'delivery mechanism' for the dissemination of what would now be described as translational research; fifth, to provide a publication and dissemination channel for entrepreneurial finance research undertaken from a wide range of disciplinary and methodological perspectives on all aspects of the financing process and with respect to all actors in the market. With the exception of addressing the issue of the fragmentation and segmentation of entrepreneurial research these aims have largely been met by the Journal and continue to be the basis on which the journal operates. This is reflected, for example, in the Journal's acceptance into the Emerging Sources Citation Index (ESCI) launched in 2015 to include high-quality peer-reviewed publications that have a regional focus or are in emerging or niche research fields (Cleaver, Mason and Harrison 2016), and in its overall ranking: 'whether measured in terms of journal rank ….. or citation data, the performance of the journal has improved significantly in recent years, entering the top quartile in its category (Finance) in 2015 based on its SJR, ranking 51st (up from 116th in four years) based on SNIP, and ranking 25th out of 216 journals (88th percentile) by citations in 2016. Increasingly, therefore, the journal is meeting its original aims of providing a high quality and visible outlet for academic research on venture capital and entrepreneurial finance' (Harrison 2017, 261).

KEY TRENDS

As the entrepreneurial finance market has developed over the past twenty years there have been a number of significant changes in terms of market structures and actors that present new opportunities for research in the future.

Market Evolution – New Structures

As the entrepreneurial finance market has evolved new structures and configurations have emerged. Many of these are discussed in the papers collected in the Special Issue. Five in particular warrant comment here as they touch on themes identified as significant in the first issue of the Journal (Mason and Harrison 1999): the apparent demise of 'classic' venture capital; the closure of the IPO market; the identification of a 'scale-up' problem; the emergence of more or less formally organised angel groups; and the changing geography of venture capital.

First, the 'death' of so-called classic venture capital – the provision of (relatively small) investment capital to startup and early stage ventures by VC firms led and managed by executives with significant entrepreneurial experience – is not a new concern (Bygrave and Timmons 1992). However, the apparent withdrawal of institutional VC from the startup and early stage capital market as the economics of managing and investing ever-increasingly large funds play out has become an increasing concern in terms of its impact on the entrepreneurial ecosystem, especially in

regions outside VC hotspots. This impact is variously identified as a funding gap for startups, an opportunity for angel groups to expand their activities and a driver of public policy intervention to close the funding supply gap. Using Pitchbook data for all sources of VC (institutional and non-institutional) in the US it is clear that in terms of number of deals transactions under $1m have grown significantly since 2006, from around 15% of all transactions to 31% in 2016, peaking at 40% in 2012/2013 (Figure 1). However, in terms of capital invested these small transactions account for no more than 1-2% of all VC investment, whereas deals of $25m or more now account for over 60% of capital invested, up from around 40% in 2006. In other words, even with the entry of new investors, including angel groups, micro-VCs and small corporate investors, the US VC market is increasingly dominated in value terms by large transactions, a trend that has significant implications for business development and economic growth (Kenney and Zysman 2019).

INSERT FIGURE 1 HERE

Second, the IPO has to all intents and purposes closed to all but the largest companies. Once seen as the final leg in the entrepreneurial finance relay race, in which funding from family and friends gives way to business angel investment which in turn hands over to venture capital before the IPO provides an exit opportunity for investors and a capital-raising opportunity for entrepreneurs, the IPO no longer serves that role. The US IPO market has fallen since 2000 (Gao et al 2013), not least because of the influence of Sabanes-Oxley which came into effect in 2002 (Weild and Kim 2010), other markets, notably in Europe, recovered after 2000 but declined after 2008 (Mason 2011). As UK data make clear (Figure 2), pre-2008 and with the exception of the immediate impact of the 2000 dot.com crash there was a very strong IPO market for companies with valuations under £100m. This market collapsed with the Global Financial Crisis in 2008, since when there has been no recovery. This raises two issues. First, it suggests that there has been a significant shift in market dynamics. For much of the 70 or so years of the institutional VC market fund raising and investment has followed the IPO cycle as a strong IPO market is associated with increased fund raising. This appears to be no longer the case: the collapse in the IPO market is associated with historically high levels of fund raising, which today exceed the availability of attractive investment opportunities (Kenney and Zysman 2019; Wright et al 2019). Second, it emphasises the increased importance of merger and acquisition/trade sale activity as an exit route for investors and a capital raising strategy for entrepreneurs: the advantages of selling out to a larger organization, which can accelerate a product to market and realise economies of scope, have increased relative to the benefits of operating as an independent firm (Gao et al 2013). However, despite their contemporary importance neither of these trends has received significant research attention.

INSERT FIGURE 2 HERE

Third, for many years the economic development problem in Europe, relative to the US, has been seen as a start-up problem. There were not enough new businesses being formed to replace the loss of jobs in traditional but declining manufacturing industries. This prompted a series of (only partially successful) policy initiatives to encourage new business start-ups and increased self-employment. More recently, the policy diagnosis has been recast as a scale-up problem. Irrespective of the relative number of new business start-ups the evidence is that in Europe new businesses grow more slowly and remain smaller than those in the US, partly because of the lower availability of expansion capital than in the US (Aernoudt 2017; Coutu 2014; Duruflé et al 2018). In other words, business growth rates, not business birth rates, are the problem. This scale-up problem is variously attributed to lack of aspiration, a shortfall in innovation, difficulty in accessing growth equity capital, a shortage of key workforce skills and experience (eg sales skills, international experience, growth company management), and low levels of leadership capacity. In the absence of scale-up capacity, growth and

growth-potential companies, particularly technology companies, in Europe[2] are increasingly being acquired by companies headquartered outside the region. One interpretation of this phenomenon is what might be described as the sell-out problem, resulting in the 'hollowing out' of companies that are acquired on account of the progressive loss of so-called 'headquarters functions' (strategy, R&D, marketing) which are provided by the acquiring company (Carpentier and Suret 2014), the loss of technical and managerial talent as it is integrated into the parent company and even the closure of the European-based company in its entirety. The consequence is that the growth potential and economic contribution of these companies is lost, and the support they have received from the economic development agencies accrue elsewhere. However, in contrast to this negative view of the effects of the acquisition of entrepreneurial companies is an alternative view which argues that acquisition is an important but under-analysed aspect of the entrepreneurial finance ecosystem and that M&A is a necessary and integral part of the entrepreneurial process. There are four reasons for this.

First, for many growing companies being acquired is a logical step in the growth process. It provides access to investment capital, markets and customers, skills and expertise in a more long-term supportive manner than the quick turnaround economics of the venture capital 'buy-build-sell' business model or the costly IPO/market listing route which opens the company to the vagaries and short-termism of the market and the possibility of hostile, as well as friendly, takeover. Second, for the acquiring company, acquisition is a strategic alternative to organic growth, allowing the company to more quickly achieve its strategic targets, access innovation ('buy-to-build') and acquire talent ('acqui-hires'). Moreover, where the target company is deeply embedded in and captures the benefits of a strong dynamic local entrepreneurial ecosystem there is less likelihood of asset-stripping, talent loss and run-down than if the local ecosystem is weak. Third, successful entrepreneurial economies are based on the development of positive feedback loops. Acquisition provides one such – for investors in early stage technology companies (business angel groups and VC partnerships) trade sales – the acquisition of their portfolio company by another company - represents by far the most common way to generate returns on their investment and increase their capacity, in terms of capital, time and energy, to make further new investments. Fourth, acquisition of their company provides the founding entrepreneur or entrepreneurial team with an exit opportunity. The resulting process of entrepreneurial recycling (Mason and Harrison 2006)stimulates the development of an entrepreneurial economy as these entrepreneurs start-up new ventures, join other growing companies in full-time or non-executive positions, act as mentors and advisors to start-ups and early-stage growth companies, become angel investors or engage in venture philanthropy. In so doing they deepen the skills, knowledge, talent and capital pools available in the region.

The fourth shift in market structure – the growing importance of angel groups - is at least in part a response to changes in the institutional VC industry. The decline in classic institutional VC following the dot.com crash (Valliere and Peterson 2004) has left a gap in the supply of entrepreneurial risk capital above the level that the typical individual business angel can provide. The response has been the development of a more visible, structured and accessible business angel market organised around angel groups and syndicates which improve the efficiency of the entrepreneur's search for capital, enabling them to raise larger amounts of funding, including follow-on rounds. Indeed, angel investors are now increasingly becoming cradle-to-grave investors, seeing their investee companies

[2] This acquisition process is dominated by the so-called FAANGS and is not restricted to the acquisition of European target companies. However, the extent to which US companies are involved in the European market as investors and/or acquirers has been the subject of recent attention (Woodward 2018)

through to exit). Angel groups also facilitate formal and informal learning by investors about the investment process, and mobilise passive capital in the form of coinvestment partners, sidecar funds and individual investors with neither the experience nor desire to become traditional business angel investors themselves (Mason et al 2016). There are two stages in this process, which can exist simultaneously (Figure 3). The initial market structure, and the implicit context for much research and policy making, involves individual investors making decisions to invest on their own in ventures they identify for the most part through personal and social networks. Given the invisibility and consequent inefficiency of this market, a second phase in the evolution of the business angel market has seen the development, often with government support, of business angel networks (BANs) which act as a clearing house matching entrepreneurs and investors, typically by providing opportunities for entrepreneurs to pitch their business to an audience of angel investors (Mason and Harrison 2003; Clark 2008). While multiple BAN-member investors may invest in the same deal they still do so directly as individuals or as ad hoc deal specific syndicates. Latterly we have seen a further iteration in the structure of the angel market as more formal managed angel syndicates have emerged. While investors still make their own investment decisions and do not invest on a pooled fund basis, it is the syndicate that makes the investment and manages the process.

A number of consequences follow. First, is the emergence of a new actor in the market, the syndicate manager or gatekeeper (Paul and Whittam 2010), who is likely to undertake the initial screening process for investment opportunities coming to the syndicate. Second, individual members of the syndicate benefit from each other's participation and generate strategic complementarities or network effects (or externalities) such that a user's gain from joining a network increases with the number of other users (Liebowitz and Margolis 2002). Third, there is evidence of the demise of the traditional funding escalator and its replacement with a 'bundling model' in which angel groups co-invest alongside co-investment funds, side-car funds, other angel groups and smaller, specialist venture capital funds in companies that have secured start-up finance and are looking to raise second round funding (Mason and Harrison, 2015; Mason, 2018). However, in displacing individual angels and in facilitating larger and follow-on investments, angel syndicates may result in the re-emergence of the first equity gap for relatively small investments (Mason et al 2016). Fourth, the desire and capacity of angel syndicates to fund ventures from startup to exit can, in the absence of further development funding in the second equity gap, lead to the downward management of entrepreneurs' growth aspirations to match the availability of capital (Harrison et al 2010) and thus contribute to the scale-up problem.

The final shift in market structure is the change in the global and regional geography of venture capital. Institutional venture capital is highly concentrated geographically both globally and within countries (Cumming and Dai 2010; Fritsch and Schilder 2008). This is evident both the locations of venture capital firms and of their investments. This arises from the preference of investors to make 'local' investments – the so-called 'one hour' travel time 'rule' (Griffith et al, 2007). However, although distance matters in venture capital investment decision-making (Sorenson and Stuart 2001; Bengtsson and Ravid 2009), the geography of venture capital is changing. While the USA continues to dominate global venture capital (KPMG Enterprise, 2018), its share has declined significantly, from 95% in the 1990s to a little over half in 2017 (Florida and Hathaway 2018). Although a small number of US cities dominate global venture capital activity, Florida and Hathaway (2018) report significant growth in venture capital investment outside the USA, particularly in Asia, reflecting the emergence of start-up ecosystems in many counties.

Nevertheless, venture capital investment continues to be 'spikey', highly concentrated geographically in a relatively small number of world's largest cities, with just 25 cities accounting for over 75% of global venture capital activity (the top 6 - San Francisco, Beijing, New York, San Jose, Boston, and Shanghai - account for over 50%) (Florida and Hathaway, 2018). Increasingly, therefore, venture capital activity is a global cities phenomenon. Integral to these trends is the internationalisation of venture capital firms (Wright et al 2005; Devigne et al, 2018), which in turn has at least in part been driven by industry trends such as the evolution of the internet (Zook 2008). Neumann (2018) suggests that the emergence of Artificial Intelligence (A1) is a key driver that is changing the venture capital landscape, forcing Silicon Valley venture capital firms to invest internationally. It draws on a different knowledge base to the silicon chip and has a different geography of talent that is less concentrated in the USA. These geographical trends highlight the need to address the continued US-centric nature of venture capital research.

Looking just at sub-national trends in the geography of venture capital investments, there has been a long tradition of research in the US (Leinbach and Amrhein 1987; Thompson 1989; Florida and Smith 1993). More recently, Chen et al (2010) and Florida and Mellander (2017) identify a growing urban (as opposed to suburban - see Florida and King, 2018) orientation of venture capital in the USA, reflected in a geographical dispersion of venture capital investments away from Silicon Valley and in favour of major urban centres, notably San Francisco, Boston, New York, Los Angeles and San Diego. Measured on a per capita basis, Bay Area metros of San Jose and San Francisco continue to lead but smaller places, especially college towns, are also highlighted as significant locations for venture capital. With the exception of a few now dated European studies (Martin et al 2002; 2005; Mason and Harrison 2002; Mason and Pierakkis 2013), studies of the geography of venture capital in other countries has not been the focus for research. Given the impact that venture capital has on uneven urban and regional economic development through its role in financing innovative businesses to scale this is an important omission.

INSERT FIGURE 3 HERE

Market Evolution – New Players

As the structure of the early stage risk capital market has developed there have also been changes in the players in the market as new sources of capital have been mobilised. These include corporate VC provided by non-financial corporations (the Silicon Valley early stage risk capital market is now dominated by the CVC arms of companies like Google, Intel, Microsoft and the like), mutual funds, sovereign wealth funds and family offices (Kenney and Zysman 2019), and government-provided or backed finance plays an increasingly important role in some geographies (Mason and Pierakkis 2013; Cumming and Johan 2019). Three new players in the market in particular are attracting considerable attention.

First, both driving and reinforcing the restructuring of the business angel market discussed above there has been a significant recent expansion in the availability of public sector coinvestment funds which invest alongside existing investors (Owen and Mason 2016; Harrison 2017). For the most part, these have been developed on the basis that government support has historically been important in the initial development of the risk capital market: 'all venture capital markets of which we are aware were initiated with government support. These markets do not appear to emerge without some form of assistance. This leads to the question as to what it is that requires the need for government support for these markets, at least in their formative stages' (Lerner 2009). The purpose of these

funds is to encourage economic growth through investment in innovative high-growth potential startup and post-startup firms by helping angel and other early-stage investors share risks through portfolio diversification and improve investment capacities by leveraging additional capital and stimulating the formation of angel groups (Harrison 2017; Owen and Mason 2016). As such, these public/private partnerships represent a shift away from direct government intervention in the market (Harrison 2017). However, although there has been some discussion and evaluation of some models of co-investment schemes (Owen and Mason 2016; Malcolm Watson Consulting 2016), there is little systematic evidence on their operation and effectiveness (EBAN 2016; OECD 2011; Wilson and Silva 2013).

There are estimated to be over 150 co-investment and related funds in the EU that meet the definition of an 'investment mechanism that results mainly from a public-private partnership between the State/Government and business angels for investments in early stage start-ups' (EBAN 2016,9), and the model has been widely adopted elsewhere (eg Australia, New Zealand). While a number of co-investment models and structures exist (Owen and Mason 2016) and can involve VC partners as well as business angels, these funds typically follow a common template: they invest alongside business angels and/or other private sector investors in deals screened by the private sector investor; the co-investment fund invests under the same terms and conditions as the lead investors, generally on a pari-passu basis; the fund is run by an independent fund manager who may use the due diligence work carried out by the lead investors to reduce costs or may undertake their own due diligence and decision-making; and funds can be managed by business angels, venture capitalists, public authorities, private equity groups or any combination of these (EBAN 2016). However, while it is believed that co-investment funds may at least double the investment capacity of the lead investors 'given the recent establishment of most European schemes, we still do not have enough information available in order to measure precisely such impact' (EBAN 2016, 19).

Second, as discussed extensively elsewhere in this Special Issue (Schwienbacher 2019; Lehner and Harrer 2019) crowdfunding has emerged in recent years as a major focus of interest, in which the Journal has played a significant role (Harrison 2016). Defined as an Internet-based funding campaign strategy, crowdfunding can be reward-based (the main focus of research to date), lending-based (the focus of relatively little research attention) or equity-based (a more recent and growing research interest. Described by both academic and industry commentators as 'angel investing for the masses' (Hornuf and Schwienbacher 2016; Hurley 2011) equity crowdfunding has grown rapidly (see, for example, Figure 4) and has primarily been directed at seed and venture funding (Figure 5).

FIGURES 4 AND 5 HERE

However, a review of the early evidence on equity crowdfunding casts doubt on the extent to which it is a substitute for angel finance (Tuomi and Harrison 2017). Equity crowdfunding (ECF) investors are younger (predominately under 40 years of age) than business angels and make smaller investments (on average their ECF investment is under £5,500 and 33% have invested less than £1,000). They are relatively unsophisticated investors: only 38% meet the criteria for self-certification as accredited investors; 44% invest from savings not investment funds; they spend on average 15 minutes on due diligence activities compared with 20 hours by angel investors, relying on the ECF platforms for this; and most ECF investors (80%) are one-time only investors, suggesting they are serendipitous affinity investors rather than angel investors per se. ECF investors are also offered, generally, a smaller percentage of the equity in the company than in business angel deals, with implications for the valuation of the deal, the scale of the returns, if any, and the likelihood of their post-involvement in the business (none). If angel investment is frequently described as 'smart money' because of the active value-added involvement with their investee businesses, much ECF

investment is the mobilisation of passive 'dumb money' into high risk investments with very limited liquidity. Furthermore, follow-on funding from angel or VC investors appears to be limited (only 32% of Swedish ECF projects and 5% of those in Germany subsequently raised BA or VC funding – Tuomi and Harrison 2017). The evidence to date suggests that the ECF market is characterised by both an adverse selection problem, in that it channels funds into projects that in economic terms should be allowed to fail early, and a moral hazard problem, in soliciting high-risk illiquid investments on possibly inferior terms from inexperienced non-high net worth individuals. This exposes the dual nature of equity crowdfunding: 'on the one hand, you could say it will democratize entry and allow for more experimentation to take place. On the other hand, sceptics will say that these are companies that should not have been funded in the first place, and when it's time to scale up and they approach VCs, they will have a hard time getting further funding' (Ramana Nanda, quoted in Blanding 2013). There is a pressing need for more research into the operation and dynamics of this emerging market, not just to assess its impact on firms' access to capital but also to evaluate the motivations of ECF investors and the impact of these investments on the household economy. This research could usefully examine the extent to which crowdfunding is becoming institutionalised (Saloman 2017), the degree to which business angels invest through crowdfunding platforms (Mason and Botelho 2014) and the extent to which some entrepreneurs see crowdfunding as more attractive than angel funding in terms of a faster process, better valuations and no interference (Brown et al 2018).

Third, the most recent entrant to the early-stage risk capital market, seen by some as a genuinely disruptive innovation that will fundamentally transform the market (Lipusch 2018), is the blockchain-based Initial Coin Offering (ICO). Although there is still some definitional opaqueness an ICO can be defined as an open call 'for funding promoted by organizations, companies, and entrepreneurs to raise money through cryptocurrencies, in exchange for a "token" that can be sold on the Internet or used in the future to obtain products or services and, at times, profits' (Adhami, Giudici and Martinazzi 2018, 1). This definition is very similar in practice to that of a crowdfunding campaign (Adhami and Giudici 2018), where fiat currency is collected (Belleflamme et al 2014). Table 1 summarises the key features of established and new actors in the entrepreneurial finance market.

TABLE 1 ABOUT HERE

ICO funding has grown significantly: 2007 data suggest ICOs worldwide raised $5.3bn, compared with US and European VC of $71.8bn and $4.3bn and accumulated crowdfunding investment of $3.4bn (Kickstarter) and $483m (Crowdcube) (Adhami et al 2018); ICO funding had exceeded early-stage VC investment by June 2017 (Lipusch 2018); and in 2017 equity investors deployed $1bn in 215 deals in blockchain startups compared to ICO fundraising of over $5bn across almost 800 deals (Li and Mann 2018). In terms of ICO activity the US, UK, Russian Federation, Switzerland and Singapore dominate; in terms of funds raised Switzerland and the US dominate the global industry, with Israel, Singapore, France and Serbia also prominent (Figure 6).

FIGURE 6 ABOUT HERE

The potential importance of the ICO mechanism is four-fold (Adhami et al 2018). First, using blockchain technology it reduces the cost of capital raising through the disintermediation of the market by avoiding intermediaries (eg crowdfunding platforms) and payment agents (banks, credit card circuits), and in so doing contributes to the democratisation of venture capital. Second, ICOs favour open-source project development and decentralised business, generating a built-in customer base. Indeed, their role in incentivising the creation of new protocol technologies has been reinforced by the initial reluctance and subsequent herding behaviour of VC investors to invest in

open source technologies due to the inability to enforce ownership on these technologies (Lipusch 2018), a clear illustration of selection bias in the entrepreneurial finance market (Franke et al 2008; Mollick and Robb 2016). Third, ICOs play a key role in launching peer-to-peer platforms, which can create value for entrepreneurs and users and increase social welfare through positive network effects (network externalities) and the aggregation of dispersed information about platform quality (Li and Mann 2018). Finally, the token mechanism in ICOs allows funders to create a secondary market for their investments, unlike the essential illiquidity of conventional equity-based, lending-based or reward-based contracts.

Based on the volume of ICO fund raising, commentators have concluded that 'the ICO phenomenon cannot be neglected or hastily marked as a scam' (Adhami et al 2018, 1), although others have been more equivocal in arguing that 'this startling growth could be interpreted as evidence of either a valuable innovation, or a dangerous bubble' (Li and Mann 2018, 2). That it may be the latter is suggested by more recent data that shows a collapse of the ICO market in 2018Q3 in what looks like a classic boom-bust cycle (Figure 7). This is a reflection of a wider trend in the cryptocurrency markets as Bitcoin, which had a peak market price of almost $20,000, was trading below $4000 by late 2018, having lost over 75% of its value since 2017. Furthermore, industry estimates suggest that almost 50% of ICOs failed to raise any money at all, of those that did raise money half lasted less than four months (Benedetti and Kostovetsky 2018),and almost 80% of ICOs in 2017 were estimated to be scams (Satis Group 2018). This is likely to reinforce pressure for increased regulatory attention (Enyi and Le 2017). ICOs presently bypass any regulation that governs businesses placing securities with retail investors in a process characterised by the absence of official prospectuses, with limited or no protection for investors and very limited information disclosure. As of September 2017 China and South Korea have banned ICOs and regulatory scrutiny is increasing in other jurisdictions. Nevertheless, despite concerns about the information asymmetries and opaqueness surrounding ICO projects and the related risks to investors, a number of jurisdictions, including the EU and Australia have supported ICOs as a new and innovative way of raising capital for fin-tech startups (European Commission 2018; Australia 2018). Given the wider concerns about the unequal distributional consequences of blockchain technology (Hughes 2017), the ICO phenomenon, whether transient bubble or lasting disruptive innovation, represents fertile ground for entrepreneurial finance research in which an ethics perspective as well as a technical perspective will play an important part.

FIGURE 7 ABOUT HERE

THE EVOLUTION OF THE JOURNAL

One of the features of the Journal since its inception has been the publication of a themed Special Issue once a year on average (Table 2). The majority of these Sis have been produced in response to open targeted calls for papers, others have been developed in association with workshops and conferences (normally supplemented by an open call for papers) and a few have emerged from the grouping of thematically linked papers received through the normal submission process. A number of themes emerge. First, particularly in the early years of the Journal, there have been a number of 'state of the art' review and research agenda SIs, notably the Jönköping workshop (2004), the New Issues in VC (2004) and the Finance, Risk and Accounting Perspectives issue (2014).

TABLE 2 ABOUT HERE

In similar vein, there have been a series of special issues focused on charting the development of the risk capital market and drawing out the implications for research. Many of these have taken a broad

approach and include papers on both new and established actors in the markets, including private equity issues (2002, 2005) which cover angel finance, venture capital, government funding and private equity per se, the post-Global Financial crisis issue (2015) which draws out the implications for the supply of debt and equity finance to SMEs in the UK, and the Funding Innovations issue (2017) which examines the implications of new entrants into the entrepreneurial finance market. Others have been more specific in their focus, including the Informal Venture Capital issue (1999), which established this as a key topic of interest for the Journal, the Funding Technology issues (2010, 2012), the Business Angels issue (2008) on data and methodology challenges in researching a largely invisible market, and the Crowdfunding issue (2013) which was the first such SI to concentrate on this new funding source.

In the case of both business angel finance and crowdfunding research the Journal has been a major contribution to these literatures beyond just these SIs. For example, crowdfunding, one of the most rapidly expanding sub-genres of entrepreneurial finance research (largely because of the relative ease of accessing data - Cumming and Johan 2017; Short, Ketchen et al 2017; McKenny, Allison et al 2007; Wright et al 2016), has featured in both the 2014 and 2017 SIs and there have been a number of other free-standing papers on this topic in the Journal. Business angel research has always featured strongly in the Journal since the publication of a research agenda paper in the second issue (Harrison and Mason 2000; Landström and Sørheim 2019). In one major recent review of the field (Edelman et al 2017), for example, almost half (46.3%) of citations to refereed journal articles are to papers published in *Venture Capital.* Another review on business angel research reported that *Venture Capital* published 56% of all journal articles on business angels in the period 2000-2013 and three of the top 10 most cited papers (White and Dumay, 2017). The segmentation of entrepreneurial finance research has been the subject of recent comment (Cumming and Vismara 2017). Specifically, the difficulty of obtaining robust statistically representative data on an inherently unknowable population (Harrison and Mason 2008; Mason and Harrison 2008) has limited the opportunity to publish angel research in the 'top' journals in entrepreneurship, management and finance. Indeed, 'for angel investment, the data to date are so scant that it is hard to even quantify the overall investment levels in different countries and even within the U.S.' (Cumming and Johan 2017. 367). In these circumstances, *Venture Capital* has emerged as the leading publication outlet for research into all aspects of angel investing, although the nature and focus of that research has shifted over time (Landström and Sørheim 2019).

Beyond this, Table 2 highlights three other themes that have characterised the Journal over the past twenty years. First, there has been a strong focus on the role of policy in stimulating the entrepreneurial risk capital market (2000 and 2002), an interest that has continued to characterise the contents of the Journal through to the present. This policy-orientation predates the recent upsurge in interest in the relevance and impact of research on the user community. Ironically, however, as Landström and Sørheim (2019) demonstrate with respect to business angel research, there is evidence that the search for academic respectability through the creation of symbolic capital in the form of refereed journal articles of a particular kind is privileging rigour over relevance (Putnam 2009; Michalski 2013). One specific challenge facing the Journal as it moves forward, therefore, is to maintain the balance between rigour and relevance and continue to provide a platform for the publication of high quality evidence-based policy oriented research.

Second, the Journal has had a longstanding concern with the place-specific geography of venture capital and other forms of entrepreneurial finance, particularly in emerging economies such as Asia (2002) and Latin America (2013) as well in more advanced regional economies such as Scotland (2010), and research in emerging economies continues to appear regularly in the Journal. This raises

two issues which we believe will continue to be represented in the Journal going forward. The internationalisation of entrepreneurial finance, and in particular the growth of the industry in emerging economies, raises questions about the transferability of the Western, essentially American, model of VC in particular and entrepreneurial finance in general to these very different contexts and the possible need for new context-specific entrepreneurial finance models (Wright et al; Harrison 2018). At the regional scale, the supply of and active demand for entrepreneurial finance is a key element in the development and effective functioning of industrial clusters (Vicente 2018) and entrepreneurial ecosystems (Mack and Meyer 2016; Alvedalen and Boschma 2017), although the extent to which the supply of entrepreneurial finance (notably venture capital and business angel investment) is a driver or a consequence of cluster and ecosystem development remains open to debate (Mason, Cooper and Harrison 2002).

Finally, in a longstanding association with the DIANA project on women's entrepreneurship the Journal has published three major collections of papers (2006, 2006 and 2018) on gender and entrepreneurial finance. The Diana Project has investigated the supply and demand side of growth capital for women entrepreneurs, seeking to fill a void in knowledge on growth-oriented women entrepreneurship and very clearly demonstrating the positive potential of female entrepreneurship. It does not treat women entrepreneurs as "other" – in other words, it does not presuppose that women's entrepreneurship is similar to or different from men's entrepreneurship but assumes that women's entrepreneurship is entrepreneurship and studies it from that point of view (Holmquist and Carter 2009; Gatewood, Brush, Carter, Greene and Hart 2009). However, notwithstanding this important research, the role of gender in entrepreneurial finance remains a relatively under-researched topic and one that assumes renewed importance as the entrepreneurial finance market continues to evolve and new sources of finance, such as crowdfunding, emerge as part of the ostensible democratisation of the market (Greenberg and Mollick 2015; Mohammadi and Shafi 2018). Specifically, there is a continuing need for more research into both the gendered supply of entrepreneurial finance, such as the emergence of women-led and women-only investment vehicles (VC funds and business angel groups –see for example Robb and Coleman 2017), and the stimulation of effective demand for funding from women entrepreneurs, and the factors (stereotype threat, competition and performance, homophily and human and social capital accumulation [the 'glass wall effect] that underlie these (Harrison, Mason and Botelho 2018).

These trends are reinforced by an examination of the most widely read and cited papers in the Journal. Using data on downloads and Crossref citations in the previous three years (as on November 2018) it is clear that papers on crowdfunding and on gender dominate (Table 3): there is considerable overlap in both lists (seven papers appear on both), which include six crowdfunding papers and three gender papers, all of which are from the DIANA project. This clearly reinforces the conclusion that in addition to the wider impact of the Journal on, for example, business angel research as discussed above, there has been a significant contribution to entrepreneurial finance research on both crowdfunding and gender: as research on these topics has expanded in recent years, *Venture Capital* has played a key role in shaping the development of these research streams. Two other features of Table 3 warrant highlighting: first, there is a clear immediacy effect, in that the two most recent papers (Brush et al 2018; Bellavitis et al 2017) have garnered over 50% more downloads than the next most frequently downloaded papers over the past three years; second, there is also a clear longevity effect in that papers published over a decade ago (van Osnabrugge 2000; Greene et al 2007; Carter et al 2008; and Clark 2008) are still being widely read and cited.

TABLE 3 ABOUT HERE

As noted above, the Journal has published occasional Executive Forum pieces which address specific themes and topics, often in a more polemical style than in a conventional academic paper (Table 4). These contributions come from a mix of industry specialists, policy makers and analysts and academics, and have been solicited or commissioned by the Editors and have undergone peer review and revision before acceptance. In one case (Sohl 2002) the entire issue is a collection of executive forum pieces with academic commentary: this arose out of a joint practitioner/academic workshop to examine the implications of the 2000 dot.com crash and its impact on the entrepreneurial risk capital market. While this remains an occasional feature of the Journal, Executive Forum pieces have been used to raise awareness of important issues and market trends, for example the scale-up gap in Europe which limits venture growth, and the case study of the operating processes and early impact of the Rising Tide women angels programme, which addresses the gender issue in entrepreneurial finance.

TABLE 4 ABOUT HERE

THE SPECIAL ISSUE

The papers in this Special Anniversary Issue of *Venture Capital* have been selected to illustrate developments in research and practice across a number of key areas of interest and research attention in entrepreneurial finance. These papers serve two purposes: they offer overviews of research to date in particular topic domains, both well-established (eg venture capital, business angels, private equity) and more recent (eg crowdfunding, policy analysis), and they provide suggestions as to how the research agenda in each of these topic areas might evolve. As such they are complementary to other recent and more conventional literature reviews of the entrepreneurial finance field (Wallmeroth, Wirtz and Groh 2018; Edelman, Manolova and Brush 2017; White and Dumay 2017; Drover, Busenitz, Matusik, Townsend, Anglin and Dushnitsky 2017).

It is now commonplace to attribute to venture capital a critical role in the evolution of new industries, technologies and markets through the provision of capital to new and rapidly growing firms. In their paper Kenney and Zysman (2019) put this role under scrutiny in the light of changes in the nature and organisation of venture capital and other components of the entrepreneurial finance market and the evolving environment for the formation and financing of new firms in the United States. They attribute the rise of the 'unicorns' – private ventures capitalised at $1bn or more – to changes in the entrepreneurial finance market since the dot.com crash of 2000: first, the decreased cost, increased speed and ease of market entry due to the availability of open-source software, digital platforms and cloud computing which facilitated the proliferation of startups seeking to disrupt incumbents across a wide range of industrial sectors; and second, an enormous expansion of the number of private funding sources [crowdfunding, accelerators, angel groups, micro-venture capitalists, traditional venture capitalists, mutual funds, family offices, sovereign wealth funds and private equity] willing to finance these new market entrants. The consequences have been significant: lavishly funded startups have been able to disrupt markets and industries and displace incumbents on the basis of price, using the availability of capital to fund massive losses for long periods of time.

In their analysis of the post-2000 entrepreneurial finance market in the US, Kenney and Zysman highlight a number of key trends: the continued dominance of Silicon Valley in the supply of and demand for venture capital, exceeding the next four largest regions combined (Massachusetts, Southern California, New York, Texas); the decline of the IPO market for emerging growth firms; and the sharp increase of platform-based startups in particular across both traditional (eg retail) and new technology-based (eg ICT, bio-medical) industrial sectors.

They also highlight a number of key issues. First, the ability of capital-fuelled new entrants to disrupt markets without generating profits may be destroying economic value, eroding social value and devaluing labour and work in the enterprise, as recent discussions of the gig economy and employment practices in companies such as Uber and Deliveroo suggest. Second, the increased ease of entry has been accompanied by increased difficulty in terms of time and cost of building and instantiating a dominant platform into an existing economic sector to the extent that the interval between legal incorporation to significant exit is now at its longest for a decade. Third, the increase in the flow of capital into the market has been associated with the emergence of mega-funds, the associated retreat from startup funding and the overcapitalisation of startups to 'put the money to work'. Fourth, Kenney and Zysman chart the ecosystem response to this emerging startup finance gap as angel groups, accelerators, digital fundraising platforms, micro-VC funds, open-ended mutual and sovereign wealth funds (particularly for later stage investments and IPO-substituting private placements) and blockchain technology-based Initial Coin Offerings emerge. Fifth, platform economy firms increasingly operate in winner takes all (WTA) markets which result in monopoly or near-monopoly positions driven by a growth-at-all-costs dynamic in an equity-consuming race to establish market leadership, a process intensified by the use by investors of growth metrics as proxies for value which drives breakneck expansion and reckless investment divorced from the economic sustainability of the investee company (Mason 2016; Rushkoff 2016). Sixth, Kenney and Zysman question the underlying viability of the platform capitalism business model, driven as it is by upward spiralling valuations of firms that seek not profitability but market share by undercutting and driving from the market less well funded competitors.

Kenney and Zysman make three points in conclusion which have wider implications for our understanding of the evolving role of entrepreneurship in contemporary economies and which both temper and reinforce suggestions that we need to move beyond the platform death stars model to consider a new post-capitalist entrepreneurship (Cohen 2018; Mason 2016; Gorenflo 2015). First, they highlight the potential negative social and welfare, as well as economic, implications of recent trends, including the commodification of labour and, in Mason (2016) and Rushkoff's (2016) terms, the exacerbation of wealth inequalities. Second, they question the general assumption that Schumpeterian creative destruction is an unalloyed good, delivering significant net improvements in employment and living standards; what worked in the nineteenth and twentieth centuries may no longer hold in the twenty-first. Third, they question the uncritical universalism of the current Silicon Valley model for innovation and entrepreneurship and its adoption by governments and educational institutions, who should instead envision distinctive growth models 'specific to their own context, resources and possibilities'.

There is an echo of the Kenney and Zysman paper in the contribution of Wright, Pruthi, Amess and Alperovych (2019), notably in their observation that private equity fund raising and buyout activity is at record levels, with PE funds raising vast sums notwithstanding a 'challenging environment' for finding good deals. However, rather than stepping back to reflect on the implications of this, as Kenney and Zysman have done, they drill down into the PE industry to address two issues: what has been the impact of PE backed buyouts over the past 20 years; and what are the implications for future research? On the first issue they demolish a number of myths about private equity. At fund level they conclude that limited partners now barely break even, even after fees and carry, and that as the industry has become more competitive the persistence of above average performance has either declined or 'noise' makes picking the best performers more difficult. At the deal level they draw four conclusions from prior research. First, in terms of profitability and productivity buy-outs are associated with growth as well as cost-cutting and efficiency gains, and enhanced profitability is associated with operating gains, the sector-specific expertise of the PE firms and geographic

proximity. Second, in terms of employment and employee relations, a highly contentious issue over the years, Wright et al conclude that overall management buyouts have more favourable impact on employment levels than do outsider-led deals. Third, in terms of innovation, investment, entrepreneurship and growth, PE-backed buyouts reduce capital constraints, thereby potentially increasing investment and provide opportunities for the exploitation of management's latent entrepreneurial tendencies. Fourth, in terms of longevity, Wright et al suggest that the quick turnaround mentality associated with PE has changed since the financial crash – the mean time to exit has lengthened and there has been a rise in secondary and even third and fourth time buyouts, which now exceed primary deals in value terms, as the initial investors exit fully or partially.

The second issue Wright et al address is the implications of these trends for future research. At the funding level, they identify new research challenges arising from the changing financing of the industry (as institutional direct investment by and syndication with sovereign wealth funds, debt funds and direct institutional investors increases), exploring issues of transparency, agency and contracting, and addressing the regional distribution of the supply of and demand for PE. At the deal level, Wright et al identify research gaps in terms of the analysis of secondary buyouts, the contribution of PF to innovation and entrepreneurship (for example, through patenting, R&D and productivity enhancement), and the internationalisation of the industry (involving, for example, strategic alliances and governance/regulatory issues). At the individual level, they identify key research challenges in terms of the experience-performance link in PE firms, and the post-exit experience of portfolio firm managers. In many respects this research agenda for a maturing industry mirrors that for venture capital and also business angel finance, reemphasising the importance of looking at the evolution of the market as a whole, and the challenges to research and practice it represents, rather than just the behaviour of the individual classes of actors in that market. Wright et al finish their paper with a call for better data, a call echoed by many others (Cumming and Johan 2017): it used to be a familiar refrain that in research 'focus follows funding'; today in entrepreneurial finance 'focus follows data'.

Nowhere is this seen more starkly than in the rapid recent expansion of research into crowdfunding, the subject of two papers in this Special Issue. Using data from Google Trends from January 2004, the recent relative increase in interest in crowdfunding is clear: references to crowdfunding are virtually absent (or are too few to register on Google Trends) before mid-2010 but exceed references to business angels in August 2011, to venture capital in July 2013 and to private equity in July 2014 (Figure 8). In his account of the rise and future prospects of equity crowdfunding, which he dates back to the establishment of the WiSEED platform in France in 2008, Schwienbacher (2019) suggests that there ae signs of maturity in the sector (the first crowdfunded unicorns – Revolut, BrewDog – the first platform IPO – Funding Circle – and increased diversity within the sector). Nevertheless, the equity crowdfunding market still faces major challenges to become mainstream, and how it fits into the entrepreneurial finance landscape is still evolving. Five challenges in particular are identified as a guide to further ECF research. First, the dynamics and operation of ECF platforms as a two-sided market matching entrepreneurs with retail investors warrant further research to build on existing studies. This would include research into the effects of different platform structures, contracting issues (such as minimum ticket size) and investment performance issues (especially of project failures). Second, given that most ECF research has focused on entrepreneurs and their startups, Schwienbacher identifies a need for more research into the 'crowd': what are their demographics, does the 'wisdom of the crowd' (Suroweicki 2004) surpass the decision-making effectiveness of the individual (but more experienced) investor, and are ECF investors similar to or different from, for example, business angel investors? Third, little is known about pre-campaign activities and their relationship to platform and investee company performance. For example, what is the screening and

selection process applied by platforms and how does this influence the likelihood of follow-on financing from future investors, and what are the motives for entrepreneurs seeking crowdfunding (eg is this funding of last resort or part of a strategic approach to venture funding)? Fourth, performance studies have for the most part concentrated on issues of platform performance (campaign success) rather than on post-campaign venture performance. Reinforcing points made in earlier reviews (Tuomi and Harrison 2017), Schwienbacher points to a small number of recent studies that suggest that few ECF-funded projects raise follow-on investment from professional investors such as business angels, and that ECF-funded ventures have significantly higher failure rates than equivalent firms that did not raise ECF. If confirmed in further research this suggests that ECF is meeting the needs of a very specific sub-set of entrepreneurs and startups that are higher risk, financially weak (with high debt levels), low or no-growth (reflected in low levels of follow-on finance) and more likely to fail. Finally, Schwienberger identifies the emergence of ICOs, and the possibility that they might be seen as a modified form of ECF, as a key emerging research area.

FIGURE 8 HERE

Schwienberger's paper ends with four challenges which have implications not just for the research agenda on ECF but for the very credibility, legitimacy, survival and sustainability of this as a funding channel: the need to generate for investors a proper risk-adjusted rate of return on their investments; the consequent requirement that the illiquidity of ECF investments is ameliorated by the development of more exit options; the need for platform scale to improve operating efficiency; and the need to generate some distinct and identifiable economic value-added. There is no doubt that in entrepreneurial finance crowdfunding is *saveur du mois*; unless these four challenges can be successfully met and overcome, it is likely to be seen as little more than a flash in the pan.

In their paper, Lehner and Harrer (2019) address at least in part Schwienberger's research agenda. They focus on the dual role of crowdfunding platforms, both in providing the tools and services necessary for the communication and translation of the value-propositions of a venture into the various cultural and regulatory contexts that the crowd is embedded in, and in influencing and potentially limiting the field through their actions. Their analysis is not restricted to equity crowdfunding but covers all platform types: donation-, reward-, lending- and equity-based crowdfunding, and they endorse Paschen's (2016) argument that different CF models will apply to the value-creation strategies and business models of ventures at different stages, an argument that warrants further research. For Lehner and Harrer, CF research to date is characterised by either a reductionist empiricism, linking a dependent variable such as a proxy for success to a small subset of CF campaign attributes, or single case studies focusing on individual entrepreneurs and their ventures. In calling for more holistic approaches, they adopt a neo-institutional perspective on CF platforms as contributors to the structure of the market through standards, norms and traditions and by acting as centralised actors influencing the system through their service offerings and by controlling resource flows in, thereby increasing system value through direct and indirect network externalities. This draws on Scott's (2008, 435) definition of a field variously as the locus of independent variables shaping organizational forms, as intermediate systems, as mediating between organizations and wider societal forces, and as systems whose features are to be explained.

Lehner and Harrer's analysis and theory-building is based on data from 11 platforms and 23 cases from seven industries, involving the coding and analysis of over 300 documents. Their model rests on five propositions inductively developed from the analysis. First, *signalling and legitimacy*: crowdfunding platforms (CFPs) are positioned as trusted platforms and centralised catalogues, providing signals and localised value translation to communicate the legitimacy of CF ventures to the crowd. Second, *gatekeeping and isomorphism*: CFPs as focal actors use their power to enable and

influence the configuration of CF-ventures in their role as gatekeepers, leading to standardisation and isomorphism. Third, *resource flow managers*: CFPs as central platforms bring together, enable and control the resource flow between ventures and the crowd, providing the two-way communication infrastructure in a co-creation space. Fourth, *information broking and repositories:* in cascaded-funding strategies (where ventures reach out to other funding sources such as venture capitalists, business angels, other CFPs) CFPs provide the necessary large-scale and professional investor relations services that smaller ventures could not provide themselves. Fifth, *public policy and institutionalisation:* public policy and institutionalisation regimes constrain and influence CFPs and are in turn influenced by their strong agenda building activities and advocacy. From a platform perspective, Lehner and Harrer conclude that crowdfunding is indeed a new form with the potential for disruption of the status quo based on its differing mechanisms, its inherent societal-values based value proposition, and its embeddedness in an overall social change process based on empowerment and equality towards a more sustainable and inclusive society.

Part of the entrepreneurial finance status-quo being disrupted, as Lehner and Harrer would have it, is the business angel market. As we have shown above, since its inception the Journal has been a major outlet for business angel research. In their paper for the Special Issue, Landström and Sørheim (2019) review 75 substantive papers on business angels published in the Journal between 1999 and 2017. Specifically, in keeping with the founding aims of the Journal, they focus on the extent to which this research has stimulated the dialogue between academic researchers and external stakeholders. They frame their analysis in terms of the 'relevance/rigour' debate in entrepreneurship more generally, as reflected in the problem-formulation gap (researchers and practitioners experience problems in different ways), the research process gap (lack of collaboration between researchers and practitioners in knowledge production), and the dissemination gap (the translation of research findings into practice).

Based on their analysis they draw a number of important conclusions. First, in recent years there has been a slowdown in business angel research, partly because the mismatch between the quality of the data available and the requirements of high-ranked journals has made BAs an unattractive research topic, and partly because the evolution of entrepreneurial finance has thrown up new topics, such as crowdfunding, that have 'knocked out' BA research. Second, they show that on a three-point scale to measure the extent and depth of implications for external stakeholders, almost 40% of papers reviewed contained no such implications, rising to almost half in the 2014-2017 period, and only 16% of papers contained concrete actions as well as general practical and policy advice. Third, they identify a lack of knowledge accumulation in the BA field: most of the papers identifying policy and practice implications have been contributed by a small number of researchers with a long record of BA research, and the high degree of mobility in the field (researchers enter the field publish one or two papers and leave) limits the ability of these mobile researchers to draw out insightful implications for external stakeholders. Fourth, based on the 48 papers providing medium (36) or high (12) levels of implications, advice on policy making (eg on tax incentives, business angel networks and market development) and on the demand side (focused on, for example, investment readiness, the entrepreneurs' human capital) dominates, with very few papers addressing implications for the supply of investment (investors). Fifth, over time policy advice in BA papers in the Journal has shifted from a focus on increasing the pool of investors and improving the efficiency of the market to a wider recognition that BA markets are heterogeneous, change over time and require long-term policy commitments. However, as the simple policy implications have been drawn, it becomes harder to develop meaningful implications, hence the decline in such papers recently.

Landström and Sørheim conclude by identifying two issues to improve the relevance of BA research and prevent it from being seen as an ivory tower endeavour divorced from practice. The first of these is that implications for external stakeholders should only be given by scholars with something meaningful to say; in many cases, where the implications are obvious, trivial and of little potential impact, papers would be stronger for their omission. The second issue identified by Landström and Sørheim is that there is an opportunity for the Journal itself to provide an enhanced forum for effective dialogue between research and practice, involving, for example, the use of practitioner and policy maker reviewers, improved dissemination strategies and creating arenas where key researchers and policy makers meet. These are all important issues to be considered afresh as the Journal enters its third decade, but the inescapable general implication of Landström and Sørheim's analysis is that under pressure from the 'publish-or-perish' calculative reason of contemporary academia, which valorises publication of data-rich quantitatively-sophisticated papers carved into minimum publishable units for high-status journals, research is becoming more arcane and less relevant. To borrow a metaphor from the English essayist and novelist George Orwell (1940/1962), academic researchers are increasingly stuck inside the whale, completely protected and insulated from the problems of the real world, accepting the experience without seeking to change it.

While a concern with matters of policy and practice may have diminished over time, as suggested by Landström and Sørheim's analysis of business angel papers published in the Journal, the analysis of the role of the public sector in the entrepreneurial finance market, a consistent theme in the Journal over the past two decades, remains an important topic of debate. As Lerner (2016), quoted earlier, has observed, no national venture capital industry has evolved without some government involvement in its genesis. Government involvement can take and has taken many forms (Murray 2007), including intervention in the structural framework of the market (eg by providing tax breaks and incentives to investors at the point of investment or at the exit through amendments to capital gains tax), and incentivising new entrants to the market (eg by subsidising fund operating costs). Of particular interest is the direct involvement in the market of the government as venture capitalist, the subject of Cumming and Johan's (2019) paper in this Special Issue.

Their starting point is a fundamental belief, shared by us as Editors and reflected in the contents of the Journal over twenty years, that academic research has an important role in impartially and objectively guiding practice and policy, addressing in particular questions such as the extent to which government venture capital funds help or hinder the emergence of private venture capital funds. They define government venture capital to include three types of programme: tax subsidies to retail investors to incentivise them to invest in venture capital (eg Venture Capital Trusts in the UK and the Labour Sponsored Venture Capital Corporations in Canada); government as limited partner investor in private funds, typically alongside other private sector institutional investors, where the government terms for investment are less favourable than those for the private sector (eg the Innovation Investment Fund and Pre-Seed Fund in Australia); and the government as direct investor, establishing a wholly-owned entity that invests directly into private companies (eg the Business Development Bank of Canada). Based on a review of the extant research Cumming and Johan conclude that the evidence on the effectiveness of government venture capital is mixed: there is massive variation in its design and performance across jurisdictions such that what works, where it works and why it works remain pertinent questions. In seeking to determine the extent to which government venture capital may have positive screening or value-added impacts or have detrimental impacts on their investee companies and negative spillover impacts on private venture capital funds,

Cumming and Johan conclude that on balance most venture capital studies show a positive role for early stage venture capital under specific conditions: the government VC programme is for early stage entrepreneurs; it is designed in partnership with the private sector; and it has an efficient governance structure with delegated professional general partners. However, they also identify two pitfalls characteristic of research in this area: the use of improper metrics and outcome variables, which give rise to false claims; and the use of inappropriate data and statistical inferences. As Cumming and Johan make clear, inappropriate or erroneous outcome measures are not just poor science but can provide an ostensibly objective rationale for the closure of well-performing government venture capital programmes. Similarly, they point out, using Canadian data, that the impact of government venture capital on the aggregate supply of capital, and in particular the question of the extent to which it crowds out private venture capital, can only properly be assessed using data that pre-date the introduction of the scheme. To use only post-introduction data only measures the extent to which private sector VCs accommodate themselves to a market landscape configured by government VC and not, in the absence of counterfactual data, the extent to which there is or is not crowding out. Finally, there are issues of statistical inference arising in particular from the non-random matching between entrepreneurs and government VC programmes (an issue that affects the assessment of the impact of other funding sources, such as crowdfunding). This issue can be addressed, Cumming and Johan suggest, by propensity score matching of government VC backed and non-backed firms, by instrumental variables analysis or the use of treatment models. However, to do so requires access to data that either does not exist or is inaccessible to researchers. Cumming and Johan conclude with a simple but vital message: if academic research is to contribute meaningfully to the design, evaluation and impact analysis of government programmes, it will need better and more careful and consistent measures of outcomes and impacts, more appropriate pre/post research designs and more robust approaches to statistical inference, all of which require better and more accessible data.

CONCLUSION – THE NEXT TWENTY YEARS?

When *Venture Capital* was launched in 1999 the entrepreneurial finance market was on the brink of a major shake-down and transformation following the dot.com crash in 2000. Today, twenty years on, the market again stands on the threshold of another major transformation, represented by the democratisation and disintermediation of the supply of entrepreneurial finance to new and growing companies in the form of crowdfunding and the application of blockchain technologies to support Initial Coin Offerings.

There is no doubt that these innovations, and others discussed above and in the papers collected in this Special Issue, suggest a continuing role for the Journal in charting, evaluating and critiquing these developments and their implications for regulation and public policy. This is of particular importance given the hyperbole which surrounds these innovations. Initial academic enthusiasm for ICOs, whether as the harbinger of a new post-capitalist entrepreneurship (Cohen 2018) or as a significant and growing capital source unencumbered by regulatory frameworks and constraints (Adhami et al 2018; Li and Mann 2018), seems misplaced in view of the 2018 collapse in the ICO market. Whether this represents the bursting of an investment bubble or a temporary market correction will provide plenty of research opportunities over the coming years. As to crowdfunding, there is little doubt over the rapidly growing fund raising it represents. There is, however, a dearth of research on equity crowdfunding and on peer-to-peer lending compared to that on reward/donation based crowdfunding. As this field develops, however, we suggest that much more attention should be devoted to the ethics of crowdfunding, given the issues raised over the inexperience of many of those drawn into this form of investing (Tuomi and Harrison 2017).

What we do not need, and what unfortunately we are increasingly seeing as Editors, is the proliferation of data driven papers where the availability of data rather than a meaningful research question provides the motivation for the paper – increasingly we see more and more sophisticated analytical sledgehammers being used to crack increasingly small and trivial research question nuts. As the Journal enters its third decade in robust good health we hope to see a strong flow of papers that pose relevant, interesting and important research questions, adopt diverse and appropriate research designs and methodologies to address these questions, focus on critical analysis and interpretation not data mining, and address the ethical and welfare implications of the evolution of the entrepreneurial finance market.

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Table 1 A comparative analysis of actors in the entrepreneurial finance market

	Business angel	**Venture capital**	**IPO**	**Equity crowdfunding**	**ICO**
Type of funding	Seed and startup capital Growth capital	Seed funding Growth capital Private equity	Public offering Growth capital Replacement capital	Open call on the web Pre-seed funding Pre-selling	Open call on the web Seed funding Pre-selling
Demand for capital	Startups and growth potential ventures Ventures whose funding needs can be fully met	High-tech startups and growing ventures New ventures with proprietary technologies	Established ventures with proven track record Scalable/high-growth ventures	Individual projects as well as ventures Projects with a first prototype Artistic/design as well as technology projects	New venture with idea or proof of concept New venture with open source technology
Supply of capital	Individual (accredited) investors Angel groups and syndicates Motivation – ROI, altruistic, hedonic Smart capital (provision of know-how)	Institutional (accredited) investors Motivation – ROI Smart capital (provision of know-how)	Institutional and private investors Motivation - ROI	Sponsors, customers and semi-professional investors Motivation – ROI, altruistic, hedonic Provision of ideas, feedback	Developers (believe in the merits of a certain technology), customers and investors Motivation – ROI, hedonic, altruistic
Transaction volume	Small to medium – suitable to cover costs associated with R&D, marketing, operations in smaller ventures	Medium – suitable to cover costs associated with R&D, marketing and operations	High transaction volume suitable to expand and grow company	Small – suitable to realise single projects and first prototypes	Medium – suitable to cover costs associated with R&D, marketing and operations
Transaction costs	Low – due to direct contact with group/syndicate Low degree of institutionalisation	High – due to high degree of institutionalisation (intermediaries, legal regulations)	High – banking and legal fees due to high degree of institutionalisation	Low transaction costs – single point of contact (the platform)	Low – direct interaction between capital seeker and capital giver
Regulation and risks	Medium degree of regulation (FCA exemptions, self-certification as accredited investor) High risk Low risk mediation through informal	High degree of regulation – SEC/FCA High risk High risk mediation through formal contracts and agreements	High degree of regulation – SEC/FCA High risk mediation through mediational requirements (eg prospectus) and formal contracts	Low to no degree of regulation – JOBS Act/SEC/FCA Low risk mediation – informal means (eg reputation mechanisms) Moderate risk	Currently no regulation Low risk mediation-informal means (eg third party website ratings) High risk –

	means (trust, experience-based judgement)			(low transaction volumes and small funding increments)	limited legal obligations and investor protection
Liquidity	Long-term investments Low liquidity – limited possibility to trade investments or raise new capital	Long-term investments Low liquidity – limited possibility to trade investments or raise new capital	High liquidity – exchanges allow to trade shares and raise new capital easily	Low liquidity – no possibility to trade investments or raise new capital	High liquidity – existing investment can be traded on third party exchanges

Source: adapted from Lipusch (2018)

Table 2 *Venture Capital*: special issues

Volume	Editors	Year	Special issue topic	Number of papers
1 (2)	Harrison and Mason	1999	Informal venture capital research	6
2 (4)	Harrison and Mason	2000	The role of the public sector in the development of a regional venture capital industry	5
3 (2)	Häckner and Hisrich	2001	Papers from the Jönköping International Business School Workshop on Entrepreneurial Finance Part 1	6
3 (3)	Häckner and Hisrich	2001	Papers from the Jönköping International Business School Workshop on Entrepreneurial Finance Part 2	5
4 (1)	Mason and Harrison	2002	Government policy and venture capital in Europe	4
4 (3)	Lockett and Wright	2002	Venture capital in Asia and the Pacific Rim	5
4 (4)	Sohl	2002	The private equity market gyrations: what has been learned?	12
6 (2-3)	Mason and Harrison	2004	New issues in venture capital	7
7 (3)	Harrison	2005	Managing growth: the role of private equity	5
8 (1)	Leitch and Hill	2006	Gender and entrepreneurial finance. Part 1	6
8 (2)	Leitch and Hill	2006	Gender and entrepreneurial finance. Part 2	7
10 (4)	Harrison and Mason	2008	Data sources for business angel research: international perspectives	5
11(4)	Mason	2009	Venture capital in crisis?	7
12 (3)	Mason	2010	Entrepreneurial finance in a regional economy: the case of Scotland	5
12 (4)	Colombo, Luukkonen, Mustar, Wright	2010	Venture capital and high-tech start-ups	4
14 (2-3)	Rasmussen and Sørheim	2012	Obtaining early-stage financing for technology entrepreneurship	7
15 (2)	Romaní and Atienza	2013	Venture capital in Latin America	5
15 (4)	Harrison	2013	Crowdfunding and the revitalisation of the early stage risk capital market	5
16 (3)		2014	Finance, risk and accounting perspectives	6
17 (1-2)	Baldock (Owen) and Harrison	2015	Financing small and medium sized enterprises: meeting the challenges after the Global Financial Crisis	11
19 (1-2)		2017	Embracing entrepreneurial funding innovations	7
20 (2)	Leitch, Henry and Welter	2018	New perspectives on women entrepreneurs and finance	6

Table 3 *Venture Capital*: most read and most cited papers 2016-2018

Most read papers[1]			**Most cited papers[2]**		
Author	**Year**	**Topic**	**Author**	**Year**	**Topic**
Brush, Greene, Balachandra and Davis	2018	Gender	Lehner	2013	Crowdfunding
Bellavitis, Filatotchev, Kamuriwo and Vanacker	2017	Entrepreneurial finance market	Belleflame, Lambert and Schwienbacher	2013	Crowdfunding
Harrison	2013	Crowdfunding	Frydrych, Bock, Kinder and Koeck	2014	Crowdfunding
Lehner	2013	Crowdfunding	Carter, Brush, Greene, Gatewood and Hart	2003	Gender
Belleflame, Lambert and Schwienbacher	2013	Crowdfunding	Van Osnabrugge	2000	Business angels
Tomczak and Brem	2013	Crowdfunding	Tomczak and Brem	2013	Crowdfunding
Frydrych, Bock, Kinder and Koeck	2014	Crowdfunding	Greene, Brush, Hart and Saparito	2001	Gender
Van Osnabrugge	2000	Business angels	Lehner and Nicholls	2014	Crowdfunding
Miloud, Aspelund and Cabrol	2012	Venture capital	Harrison	2013	Crowdfunding
Lehner and Nicholls	2014	Crowdfunding	Clark	2008	Business angels

Notes 1. A minimum of 2100 downloads in previous three years (as of November 2018)

2. A minimum of 30 Crossref citations in previous three years (as of November 2018)

Table 4 Executive Forum papers in *Venture Capital*

Author	**Year**	**Topic**
Nishizawa	1999	Japan's credit crunch
Denny	2000	The UK venture capital industry
Piper	2000	Financing high tech SMEs in UK – policy implications
Queen	2002	Government policy on equity finance and investor readiness
McGlue	2002	Venture capital in Europe – policy issues
Sohl	2002	Private equity market gyrations – Special Issue
Bygrave et al	2003	GEM data on informal investing in 27 countries
Aernoudt and San Jose	2003	Early stage financing and corporate venturing
Kumar et al	2004	Corporate finance in China
DeClerq and Fried	2005	VC communication and commitment
Aernoudt	2005	Stimulating business angel investments
Aernoudt, San Jose and Roure	2007	Public support for the business angel market
Park and Vermulen	2016	The future face of venture capital
Aernoudt	2017	The scale-up gap in Europe
Coleman and Robb	2018	The Rising Tide angel training programme

Figure 1 US Venture Capital Investment by Deal Size (source: PitchBook)

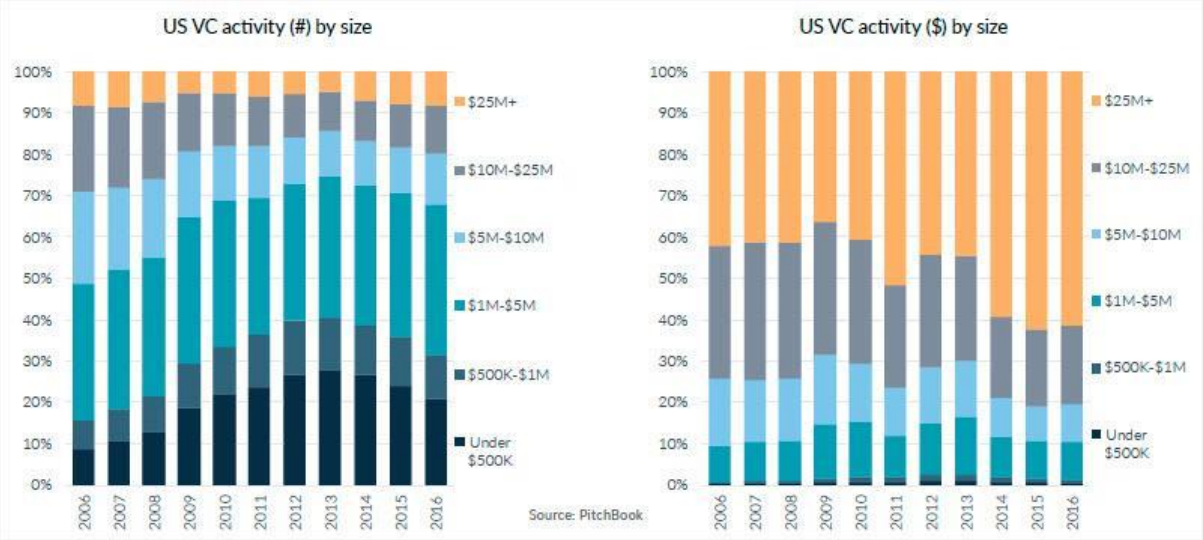
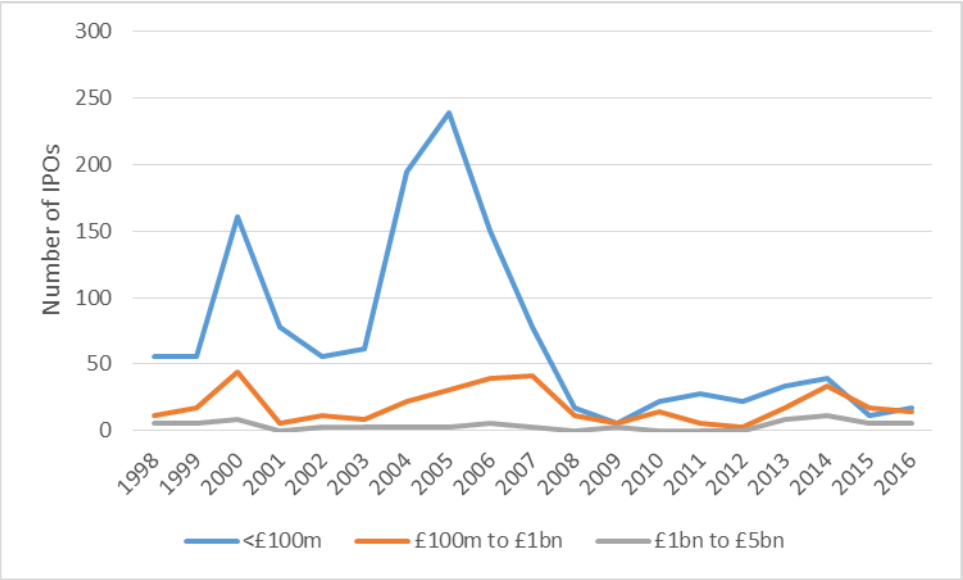


Figure 2 Number of IPOs of UK-incorporated companies onto LSE exchanges by year and market capitalisation



Source: HM Treasury (2017)

Figure 3 The rise of angel groups

Figure 4 THE EVOLUTION OF THE CROWDFUNDING MARKET: THE CASE OF SWITZERLAND

Source: Dietrich and Amrein (2018)

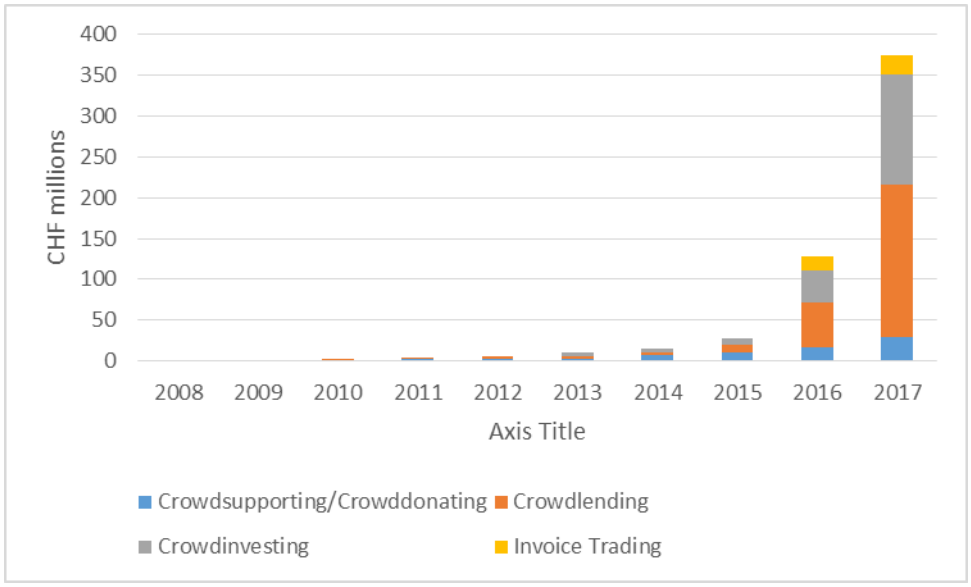


Figure 5 Crowdfunding deals by business development stage

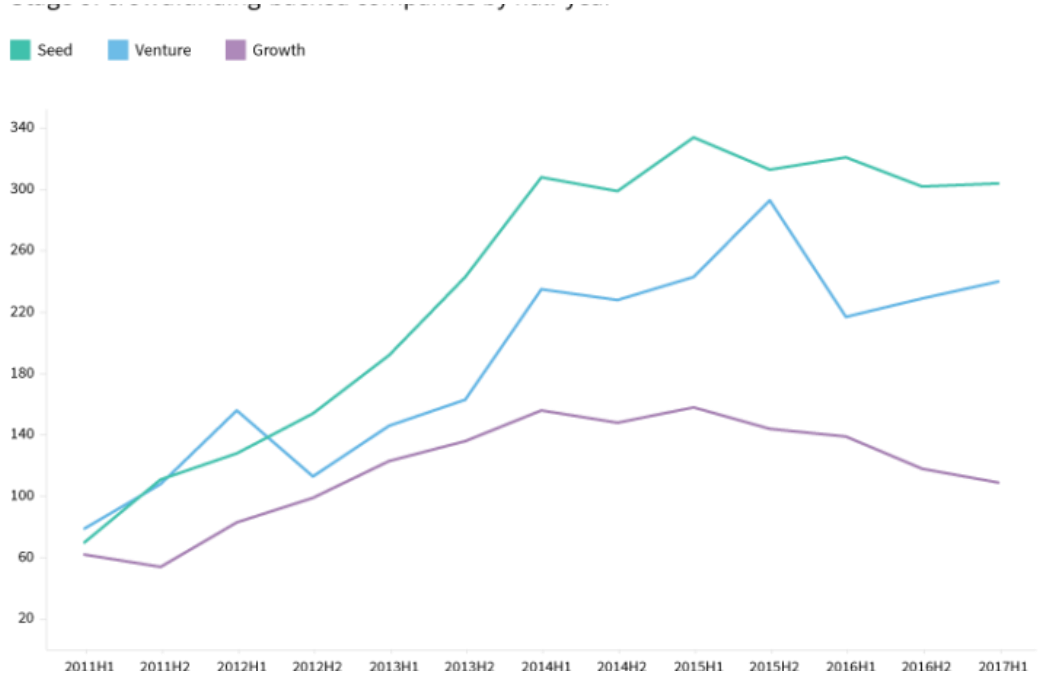


Figure 6 Geographical distribution of ICOs

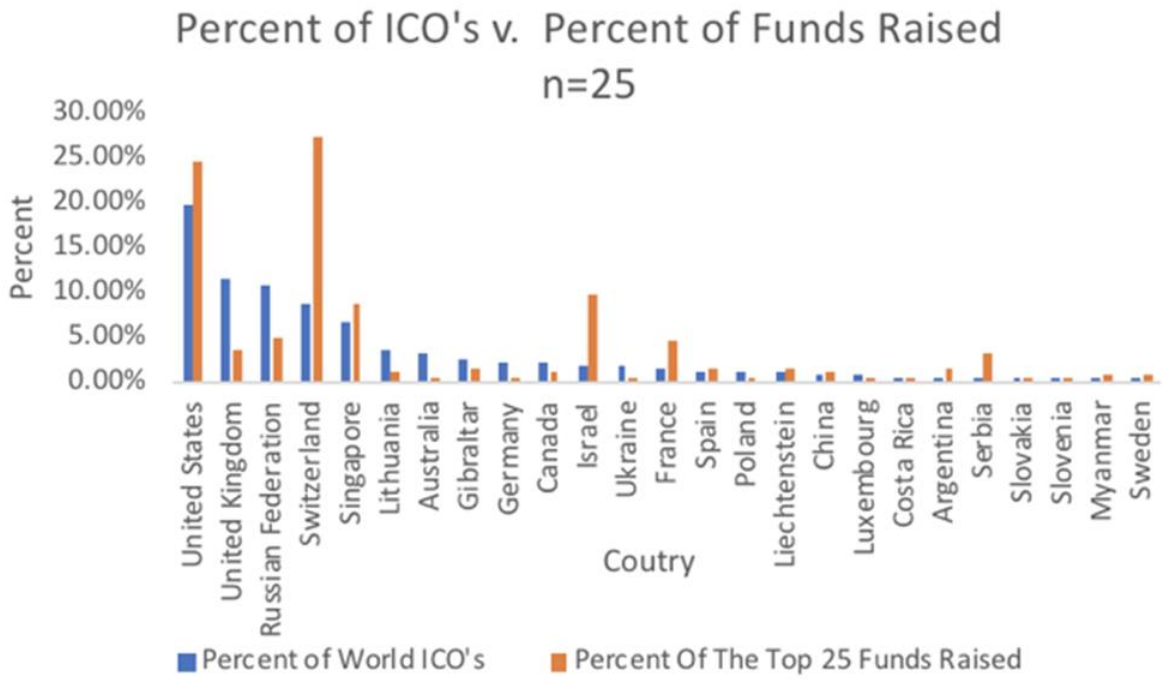
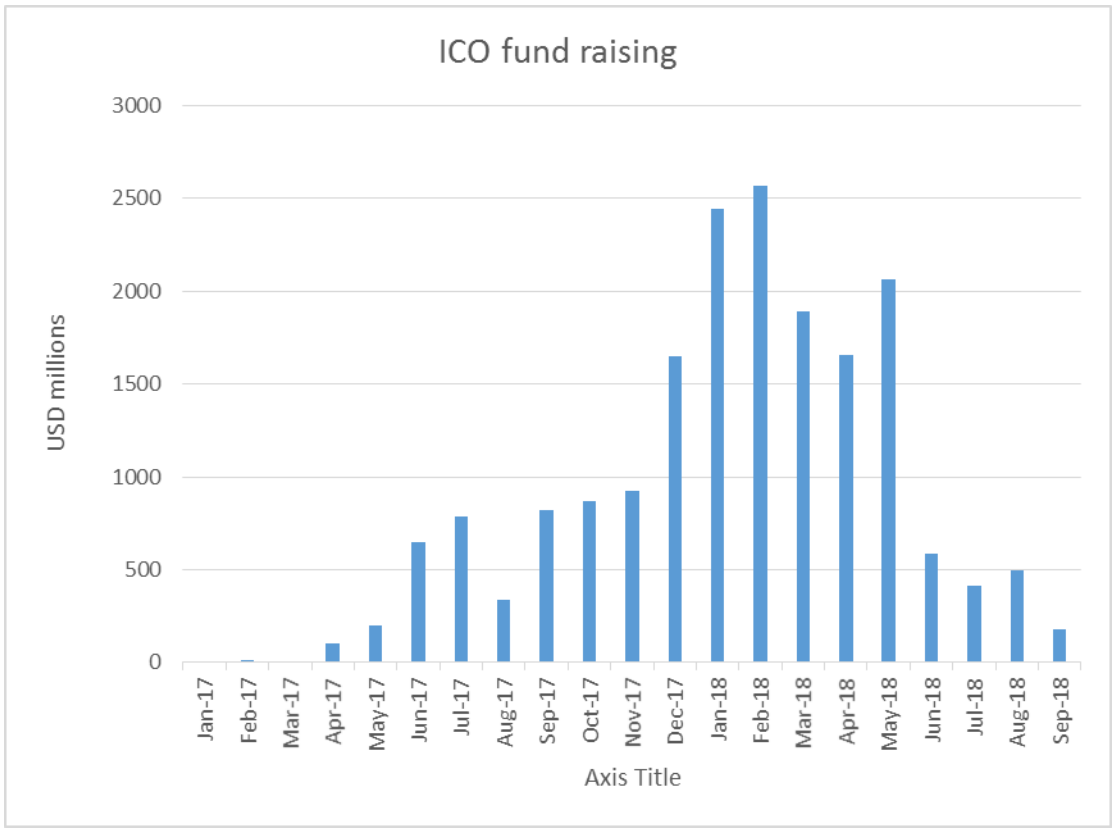
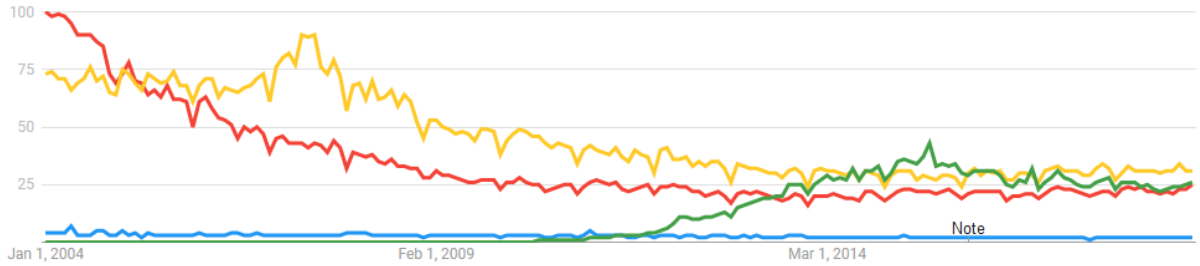


Figure 7 ICO fund raising 2017-2018



Source: Token Data

Figure 8 Interest level in venture capital, business angel, private equity, crowdfunding 2004-2018



Key: Private equity venture capital business angel crowdfunding

Source: Google Trends